

REMARKS

Examiner Nguyen now rejects claims 16-18, 20, 21, 23, 24 and 26 (claim 22 was previously canceled) under 35 U.S.C. § 103(a) as being unpatentable (obvious) over Barkmann '040 (in spite of the added “outside” limitation).

The above rejection has been rendered literally moot, because claims 17 and 18 have been canceled and their limitations added to claim 16 from which the remaining claims 20, 21, 23, 24 and 26 depend.

In the Examiner’s Response to Arguments, the Examiner finds obviousness in the claimed subject matter “due to lack of criticality or unexpected results”.

Applicant respectfully submits that the amended claim 16 and its dependent claims recite subject matter which is neither disclosed nor even suggested in Barkmann. In other words, Barkmann does not teach or even suggest all of the limitations of the amended claim 16. Furthermore, the claimed subject matter is critical and produces unexpected results as now described.

1. For detailing the technological relationships of the invention, the following features are listed which mutually interact to form the claimed invention. The key differences from the prior art are shown below:

- *At least one sifter (15) precedes the distributor/hopper in the direction of transport of the tobacco,*
- *the sifter is disposed as a separate member outside the distributor in a sifter housing (16),*
- *the supplied tobacco can first be conducted through the sifter (15) completely in such way that solely tobacco treated by sifting can be introduced into the distributor,*
- *the tobacco can be supplied from the sifter (15) in the upper region of the sifter housing (16) via a supply line (19) issuing into the sifter housing (16).*

- *the treated tobacco can be introduced from the upper region of the sifter housing (16) directly into the distributor by means of a connecting line (20),*
- *the sifter (15) is designed as a cone-type sifter with a cylindrical sifter housing,*
- *an upright guide body (21) in the geometrical form of two double cones arranged one above the other is arranged centrally within the sifter housing (16),*
- *the guide body (21) is surrounded by a guide wall (22) of circular cross section which runs at a distance from an outer surface area of the guide body (21) and which forms with the guide body (21) a wavy or zigzag-shaped sifting duct (23).*

As will be explained in more detail below, the configuration of the sifter is particularly critical to the claimed device. One factor playing a crucial role in the performance of the sifter is that the supplied tobacco is optimally introduced into the sifting duct 23, which has a circular sectional shape, through an upper, conical region of the guide body 21, namely the upwardly directed “conical tip”.

2. In the preparation of the documentation for the present patent application, the effects of the inventions’ separation of sifter and distributor/hopper was not evident in all of its consequences. This is also the reason why the patent application shows in the exemplary embodiments pursuant to Fig. 4 to Fig. 7 a conventional sifter embodied as a zigzag duct which is an integrated component of the hopper/distributor. In the meantime, however, the great importance of the concept of the invention pursuant to Fig. 1 to 3 has been recognized in professional circles, namely the functional and constructive separation of the sifter from the hopper/distributor.

a) One essential reason for this step is that sensitive members of the distributor, which usually are arranged upstream (as seen in the direction of work or tobacco transport) of the integrated sifter (configured as a zigzag duct), are contaminated with all kinds of harmful admixtures with the tobacco. These include, in addition to product-related stems, wooden parts, etc., such articles as stones and even metal parts. Observations in practice report the constant

risks of increased wear and tear, and even damage, that are posed to the elements upstream of the sifter.

This problem cannot be avoided by taking such measures as redesigning a conventional hopper/distributor, for example, as shown by a distributor in the embodiment of US 2003-0034040 to Barkmann, in such a manner that the sifter 12 is arranged at the input side. In the exemplary embodiment pursuant to Fig. 1 of Barkmann, according to these ideas, the sifter 12 could be disposed directly after a gate, which in Barkmann is designated overall with the number 1 or 101. In Barkmann, disposed upstream of the zigzag sifter 12 are the elements, 2, 3, 7, 8 and 11, which are susceptible to mechanical stress. In particular, the so-called carded feeding roller 7 is susceptible to mechanical stress caused by stones, metal parts, etc. Such a (conceivable) alternative solution is not possible at all, as explained below under c).

b) The exemplary embodiments shown and described in the present application for a hopper/distributor pursuant to Fig. 4 to Fig. 7, i.e. the exemplary embodiments having a sifter with a zigzag-shaped duct, are also configured according to the same concept as the apparatus of Barkmann. From the illustration shown in Fig. 4 and Fig. 6 it can be seen that, even in this "conventionally designed" hopper/distributor, a majority of elements susceptible to mechanical stress, namely spiked rollers 35, 36, 37 and 55, are located upstream of the sifter 56, as seen in the direction of tobacco movement.

c) The technical background of this is as follows:

The hitherto exclusively used sifters for hoppers/distributors, namely zigzag-shaped ducts integrated in the flow of tobacco, (Barkmann and Fig. 4 to Fig. 7 of the present application) exhibit considerable disadvantages in their design and above all with respect to their operation. The technical principle of sifting as implemented in the zigzag ducts is basically the same as that

employing a cone-type sifter within the meaning of the invention. However, the sifter duct is configured as having a rectangular cross-section. This limits the possible, admissible transverse dimension of the sifter duct. The processing elements upstream of the sifter duct, namely the rectifier and spiked rollers, are assigned the task of distributing the tobacco prior to sifting such that the sectional space of the sifter duct is sufficiently exploited. The upstream elements therefore have the important task of distributing the tobacco transversely in relation to the rectangular cross-section of the duct. In order to achieve an efficient operation of such a sifter, it is necessary for the tobacco to be distributed as extensively as possible across the entire width of the (rectangular) cross-section of the duct.

But a suitable lateral distribution of the tobacco is possible only if the sifter duct has a limited lateral dimension or width (meaning the dimension of the sifter duct running transverse or perpendicular to the surface plane of the drawing pursuant to Fig. 1 of the Barkmann specification). If the tobacco is not sufficiently prepared before it is fed to this sifter, there are produced adjacent lateral regions within the sifter, i.e. within the zigzag duct, which have an acute concentration of tobacco, next to neighboring regions relatively free of tobacco in which only air flows upward. The problematical nature of the prior art sifter is therefore one of distributing the tobacco at the input end of the sifter in the transverse direction. This is possible to a limited degree only with the elements employed in practice, with the result that, for an effective sifting of tobacco through a zigzag duct within the distributor, only a very limited efficiency of the sifter can be achieved (due to the limited dimension of the duct). The overall performance of the hopper/distributor must therefore be oriented to the performance of the sifter.

For the sake of completeness only, it is noted that in the apparatus of Barkmann a "follow-up sifter 43" is assigned in addition to the sifting unit 12. Apparently, incompletely

sifted tobacco is redirected through the complex duct system of Barkmann back to the lower region of the sifter, where it is “re-sifted”. This technical necessity results from the inadequate performance and reliability of the sifter.

3. With the present invention’s concept of the technical separation of the distributor/hopper and sifter, it is possible to achieve an optimal orientation of sifter performance to the (maximum) performance of the distributor. The distributor is supplied exclusively with tobacco that has been cleared of extraneous and detrimental components, such as stones, metal parts, coarse stems, etc. The distributor is thereby devoted to the exclusive task of preparing the tobacco for the production of the tobacco strand. It lacks the elements which in the prior art are arranged upstream of the sifter for preparing the tobacco for sifting.

In this respect the embodiment of the sifter as a cone-type sifter plays an important role. The tobacco is supplied in the upper region of the sifter housing, namely through the supply line 19. Due to the technical specifications of a cone-type sifter, a “naturally occurring” automatic distribution of the tobacco is made across the entire cross-sectional area of the sifting duct 23. This results in increased performance. Here the distribution process is also independent of the dimensions of the sifter or sifting duct. The upper conical region of the guide body 21, namely the upward pointing “conical tip”, causes the appropriate, generally uniform distribution of the tobacco all around the region of the sifting duct 23. The efficacy of the sifter in the claimed embodiment results not only in increased sifter performance but also in effectively sifted tobacco free of detrimental components. No “follow-up” sifting is necessary.

4. In hoppers/distributors for tobacco in conjunction with the production of cigarettes, a “gate” at the entry side is a usual feature, as already mentioned above and designated in Barkmann with the reference numbers 1, 101. The exemplary embodiments of the

present invention also have a lock 10 in the entry region of the distributor. In the drawings of the present application this consists of the schematic view of two flaps 33. However, this is actually a complex metering system for determining the quantity of tobacco to be supplied downwards into the distributor.

It has been shown in practice that tobacco containing solid components, such as stones, metal parts and coarse stems, is detrimental to the closing members of the lock. These components damage the indispensable "lock" when they become lodged between the closing members and the metering members when the closing members return to their closed position. The inadequate functioning of the metering locks in prior art sifters has indeed proved to be a great problem in practice.

5. The special features which are both novel and patentable (nonobvious) over the prior art can be summarized as follows:

- a) The functional, constructive separation of distributor and sifter provides greater reliability with respect to the dimensioning of these installations, particularly with respect to establishing the performance of the sifter.
- b) Here, the advantages of separate components with respect to the servicing, maintenance, etc. of the elements is mentioned.
- c) The most significant technical effect is that the elements of the sifter are supplied with effectively and completely sifted tobacco, i.e., free of solid impurities.
- d) The separate arrangement of the assemblies makes it possible to configure the sifter to achieve optimum performance. Its configuration as a cone-type sifter allows one to dispense with the pre-processing elements that are necessary in the prior art (Barkmann) as well as in the embodiments illustrated in Applicant's Fig. 4 to Fig. 7 for preparing the tobacco for

sifting. In the case of the claimed invention, the tobacco can be supplied to the top of the sifter without the described pre-processing. The design of the sifter results in a distribution of tobacco that is otherwise achieved only with the help of sensitive elements.

e) Likewise of great importance is the possibility, afforded by the invention, of employing high-performance cone-type sifters, since the dimensions of the sifter and sifter housing are now independent of the functional spatial limitations posed by the distributor.

Thus, Applicant respectfully submits that the independent parent claim 16 recites novel and nonobvious subject matter which greatly enhances the processing of tobacco during the production of cigarettes as compared to Barkmann.

Therefore, Applicant respectfully requests Examiner Nguyen to reconsider and withdraw the rejection under 35 U.S.C. § 103(a), and to **allow claims 16, 20, 21, 23, 24 and 26.**

If the Examiner feels for any reason that the application is not now in condition for allowance, the Examiner is respectfully requested to call the undersigned attorney to discuss any unresolved issues and to expedite the disposition of the application.

Applicant files concurrently herewith a Petition (with fee) for Extension of Time of one month. Applicant hereby petitions for any extension of time which may be required to maintain the pendency of this application, and any required fee for such extension is to be charged to Deposit Account No. 19-4880. The Commissioner is also authorized to charge any additional fees under 37 C.F.R. § 1.16 and/or § 1.17 necessary to keep this application pending in the Patent and Trademark Office or credit any overpayment to said Deposit Account No. 19-4880.

Respectfully submitted,

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